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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/546,981	04/11/2000	Anthony Matteo Gallo	RAL9-00-0035	4599

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IBM CORPORATION
PO BOX 12195
DEPT 9CCA, BLDG 002
RESEARCH TRIANGLE PARK, NC 27709

EXAMINER	
PRIETO, BEATRIZ	

ART UNIT	PAPER NUMBER
2142	13

DATE MAILED: 04/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/546,981	Applicant(s) GALLO ET AL.	
	Examiner B. Prieto	Art Unit 2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is in response to Amendment filed 01/21/04. Claims 1-16 remain pending and are hereby set forth for examination.

2. In regards to applicant's amendment to the specification, which deletes added new matter to the specification has been entered.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 7 and 11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In this case, Applicant points to page 5, line 22 to page 6, line 7 for support to added limitation "a network processor comprising an L2 table and a MAC address database". Indicated portion was been reviewed, however this portion discusses where the NP implements "L2 data frame processing" (shown in Fig. 2 as element 213) which uses a database. Applicant's attention is directed to Fig. 2, wherein the L2 data frame processing is performed by a logical bridge (213) and uses a MAC address database (210) and the L3 data frame processing is performed by a logical router (208) and uses a routing table (209). The network processor comprising a L2 table and a MAC address database is not supported in applicant's specification according to cited portion. Examiner believes this is a typographical error, an applicant intended this to be a network processor NP comprising a ~~L2~~ L3 table and a MAC address database. For the purposes of examination the limitation will be treated as a typographical error, correction is required if this is the case.

Claim Rejections - 35 USC § 103

5. Quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action may be found in previous office action.

6. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over NAGAMI et. al. U.S. Patent No. 6,343,322 (Nagami hereafter).

Regarding claim 1, Nagami teaches features of the invention substantially the same as claimed, teaching a network router 601 (col 7/lines 1-10, 31-40 of Fig. 4) (switch) comprising a control unit 207 (control point) and a plurality of network processing units 202-206 (network processors) (col 8/lines 54-62), a method comprising;

(a) receiving data (data frames) from a network (Fig. 7, step S1, col 9/lines 27-29);

(b) performing transferring functions (col 1/lines 53-col 2/lines 5, col 9/lines 8-24, bridging functions, col 12/lines 64-67) (logical bridging, filtering, col 2/lines 53-56) of data frames received (Fig. 7, step S2);

wherein the data frames received are determined to be processed (i.e. destined) by the network layer or an equivalent processor ("control point") (Fig. 4, 204, Fig. 7, S4) in a processing unit (Fig. 4, 204-202) (network processor) directly connected to said control point (Fig. 4, 207);

said network processor (204-202) comprising a table (col 9/lines 33-37, 65-67) and a storage means ("MAC address database") for correlating the datalink address (MAC address) with network interface ports (col 9/lines 8-23, col 14/lines 37-42, col 1/lines 53-64); although the prior art of record teaches performing transfer (e.g. bridging) functions or operations on data frames received destined for a processor operating, manage, direct, or manipulate, i.e. "control" received data frames, this processor(s) is not called "control point";

It would have been obvious to one ordinary skilled in the art at the time the invention was made to implement claimed invention with prior art teachings having element performing the same functions as claimed. Therefore, the nomenclature noted differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.

Regarding claim 2 (c) determining whether said data frame is destined for said control point (Fig. 7, S4); and

(d) sending said data frame to said network processor directly connected to said control point when said step (c) indicates that said data frame is destined for said control point (Fig. 7, S4-S5).

Regarding claim 3,

(e) searching (looking up) a destination address in said frame in data storage, (e.g. table t1) (media access control (MAC) address database) (col 1/lines 53-64, Fig. 7, S2);

(f) sending said data frame to a unit having routing functions (logical router) (col 1/lines 38-46, col 8/lines 19-23, col 9/lines 33-37) when said look-up determines that said data frame requires processing by a logical router (Fig. 7, S2-S5, col 14/lines 50-col 15/line 4);

(g) looking up a destination address in a routing table (e.g. table t3) in said logical router (Fig. 7, S8); and

(h) sending said frame to said network processor directly to connected to said control point when said look-up determines that said frame is destined for said control point (Fig. 7, S4-S5, col 14/lines 37-col 15/line 3).

Regarding claim 4, modifying the header (setting a bit) in a portion (frame header) appended to said frame to indicate that said frame is destined for said control point (Fig. 7, S3, col 14/line 37-col 15/line 3).

Regarding claim 5, modifying, or adding or updating (i.e. learning) learning a source MAC address in said frame in a MAC address database (col 15/lines 24-30, col 9/lines 65-col 10/line 7); and

sending said frame to said control point (i.e. sending said data frame to a unit having routing functions (logical router), col 1/lines 38-46, col 8/lines 19-23, col 9/lines 33-37, when said look-up determines that said data frame requires processing by a logical router Fig. 7, S2-S5, col 14/lines 50-col 15/line 4).

Regarding claim 6, looking up a destination address in a frame originating from said control point in a MAC address database; and forwarding said frame to a target network processor and port found in said look-up (col 14/line 37-col 15/line 3, table correlate destination and port, col 7/lines 9/lines 10-23 & 33-37, tables, col 15/lines 20-52).

Regarding claim 7, this apparatus claim comprises elements discussed on claim 1, same rationale of rejection is applicable. Further, wherein said plurality of network processors programmed with logical bridging and logical routing functions, wherein the network processor performs bridging functions and the control point performs the routing functions (combined routing and bridging functions, col 1/lines 64-col 2/line 5, combined routing L2 (bridging) and L3 (routing) functions (Fig. 4, data link layer functions of units 202-206, & routing functions of unit 207 network layer functions (col 10/lines 61-col 11/line 22).

Regarding claim 8, determination and sending steps of claim 2 are performed by the units performing said logical bridging and logical routing functions (Fig. 7, S4-S5, units 202-207, col 11/lines 34-col 15/line 3).

Regarding claim 9, comprising limitations discussed on claim 1 and claim 5, same rationale of rejection is applicable.

Regarding claim 10, same rationale from claims 1-5 regarding a frame send from said network processor to the control point is applicable to frames received from the control point send to the network processor (Fig. 7, S7).

Regarding claim 11, this claim comprises a computer-usable medium storing computer executable instructions, said instructions when executed by processors in the apparatus of claim 1, implementing a method described in claim 1, same rationale of rejection is applicable to the software implementation claims

Regarding claims 12-16, this claim comprises the computer-usable medium corresponding to the steps performed in claims 2-6, same rationale of rejection is applicable to the software implementation claims.

Response to arguments

7. Applicant argues prior art does not teach claim limitation as recited "a network processor directly connected to a control point", because the Nagami et. al. clearly shows on the network layer unit (207) ("control point") directly connected to the network layer control unit (204) (claimed "network processor")

In response to this argument, it is noted that claimed limitation "a network processor directly connected to a control point" is admitted prior art (see Fig. 1, page 1-page 5, line 9 and see MPEP 2129). Specifically, when discussing a network switch containing a processor for performing L2 protocol for frame transfer called "bridging" and a layer 3 protocol called "routing" transfer operations. Existing system include a network switch having control point (101) including a processor and software implemented L3 operations and L2 operations (page 2, lines 10-21), the software router (L3) implementation includes a routing table (103) and the software bridge (L2) includes a MAC database (105) correlating MAC addresses with physical ports (page 2, lines 21-23). Network processor(s) on the switch include port (107) for receiving frames (108) and fast database look-ups. L3 frames (i.e. frames 108 received via ports 107) propagated on the network are processed by the control point (CP) (i.e.

network processor NP 106 is connected to control point CP 101 as illustrated in Prior art Fig. 1 these are directly connected). A network processor directly connected to a control point is not set forth in applicant's disclosure as a point of novelty.

8. Applicant argues prior art does not teach newly added claim limitation as recited, specifically, a network processor comprising a table and a database, because the Nagami reference network layer switch unit 204 does not contain a table and a database.

In response to the above-mentioned argument, the Nagami teaches wherein the network software implementation (202-204) include means for performing routing functions (col 8/lines 19-23), said network software units (202-204) comprises a table (claimed "L3 table") (see col 9/lines 33-37, 65-67) and bridging functions using a storage means (claimed "MAC address database") for correlating data link (MAC) address with network interface port units (201) (see col 9/lines 8-23, col 14/lines 37-42, wherein the MAC address is the data link address used for performing known L2 bridging functions see col 1/lines 53-64 and col 14/lines 37-42).

9. Applicant's arguments filed 01/21/04 have been fully considered but not rendered persuasive.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prieto, B. whose telephone number is (703) 305-0750. The Examiner can normally be reached on Monday-Friday from 6:00 to 3:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, Jack B. Harvey can be reached on (703) 305-9705. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800/4700.

Any response to this action should be mailed to:
Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to the Central Fax Office:

(703) 872-9306, for Official communications and entry;

Or Telephone:

(703) 306-5631 for TC 2100 Customer Service Office.

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington VA, Fourth Floor (Receptionist), further ensuring that a receipt is provided stamped "TC 2100".

B. Prieto
TC 2100

Patent Examiner
March 28, 2004